EXHIBIT 15

Declaration of Ronald S. Landis, Ph.D.

SUPPLEMENTAL ANALYSES

IN THE MATTER:

EEOC v. SCHUSTER CO.

Civil Action No: 5:19-CV-4063 (N.D. Iowa)

DECEMBER 9, 2020

1. I, Dr. Ronald Landis, supplement my previous report with several additional analyses made possible after receiving additional employment data from the Defendant.
2. In order to evaluate whether the frequency of injuries was reduced following the introduction of the CRT test, I conducted several additional chi-square analyses. The chi-square test indicates whether the frequency of injuries is different than one would expect by chance alone. Having been provided a dataset that contains a roster of Schuster drivers from 2014-2020 (Driver List 2014 to Current.xlsx) and using driver numbers included in an Excel file provided by Dr. Hanvey, I performed alternative chi-square analyses that define chance in terms of the total driver population.
3. First, in a supplemental Excel file[1] associated with Dr. Hanvey's report, he includes the total number of drivers each year from 2011-2019. Of all drivers across all years, 26.99% of the total occur in the years preceding the use of the CRT test (2011-2013) and 73.01% of the total population of drivers are associated with the years 2014-2019.[2]
4. Table 1 includes Dr. Hanvey's total number of drivers for each of the included years (2011-2019) as well as the relative proportion of drivers. These numbers do not appear to be computed from any specific fields in the Excel file, but pulled from another source. I use these percentages as expected values in updated chi-square analyses for each of the three coding strategies.
5. Second, I computed the number of drivers employed by Schuster on December 31 of every calendar year from 2014-2019 using the data supplied in the file "Driver List 2014 to Current.xlsx."[3]

[1] Schuster WorkComp Injuries_withGraphs_07-06-20
[2] The CRT test was initiated partway into 2014, but given Dr. Hanvey's file included only year-end employee totals, years cannot be split.
[3] Defining driver populations using the December 31 approach was chosen to be consistent with numbers reported in Dr. Hanvey's Excel file (Schuster WorkComp Injuries_withGraphs_07-06-20)

6. Table 2 includes the total number of drivers for each of the included years (2011-2019) as well as the relative proportion of drivers.[4] Of all drivers across all years, 29.49% of the total occur in the years preceding the use of the CRT test (2011-2013) and 70.51% of the total population of drivers are associated with the years 2014-2019. I use these percentages as expected values in updated chi-square analyses for each of the three coding strategies.

Year	*Number of Drivers*	*Relative Proportion of Drivers*
2011	219	8.34%
2012	226	8.60%
2013	264	10.05%
2014	269	10.24%
2015	294	11.19%
2016	320	12.18%
2017	334	12.71%
2018	340	12.94%
2019	361	13.74%
Total	2627	

Table 1. Total Driver Population by Year (2011-2019) – Hanvey

7. The number of drivers from 2014-2019 differ between Dr. Hanvey and me as mine were calculated from the file "Driver List 2014 to Current.xlsx." It is unclear to me how Dr. Hanvey computed the numbers he reported.

[4] Full driver rosters were not provided prior to 2014. For 2011-2013, I rely on the numbers supplied in an Excel file (Schuster WorkComp Injuries_withGraphs_07-06-20) provided in support of Dr. Hanvey's report.

8. The chi-square test indicates whether the frequency of injuries is different than one would expect by chance alone. If there are statistically significantly more injuries prior to the introduction of the CRT test than after the test was implemented, then the chi-square test would have a probability of $p < .05$.[5]

Year	*Number of Drivers*	*Relative Proportion of Drivers*
2011	219	9.11%
2012	226	9.40%
2013	264	10.98%
2014	221	9.19%
2015	252	10.48%
2016	257	10.69%
2017	277	11.52%
2018	314	13.06%
2019	374	15.57%
Total	2404	

Table 2. Total Driver Population by Year (2011-2019) – Landis

[5] A significant chi-square could also be observed if there were a statistically greater number of injuries following implementation of the CRT test.

DR HANVEY TOTAL DRIVER NUMBERS

9. Following the DCI coding system, I observe a non-significant chi-square test for the number of injuries (chi-square = 0.00, p = 1.00, see Table 3).

	Injury Count	Expected Proportion	Observed Proportion
2011-2013	3	.2699	.2727
2014-2019	8	.7301	.7273
Total	11	1.00	1.00

Table 3. Observed and Expected Proportion of Injuries – DCI Coding/Hanvey Total Drivers

10. Following Dr. Hanvey's coding protocol, I observe a non-significant chi-square test for the number of injuries (chi-square = 2.68, p = .14, see Table 4).

	Injury Count	Expected Proportion	Observed Proportion
2011-2013	9	.2699	.4286
2014-2019	12	.7301	.5714
Total	21	1.00	1.00

Table 4. Observed and Expected Proportion of Injuries – Dr. Hanvey Coding/Hanvey Total Drivers

11. Following the Millan coding, I observe a non-significant chi-square test for the number of injuries (chi-square = 1.29, p = .39, see Table 5).

	Injury Count	Expected Proportion	Observed Proportion
2011-2013	6	.2699	.4000
2014-2019	9	.7301	.6000
Total	15	1.00	1.00

Table 5. Observed and Expected Proportion of Injuries – Millan Coding/Hanvey Total Drivers

DR LANDIS TOTAL DRIVER NUMBERS

12. Following the DCI coding system, I observe a non-significant chi-square test for the number of injuries (chi-square = 0.03, p = 1.00, see Table 6).

	Injury Count	Expected Proportion	Observed Proportion
2011-2013	3	.2949	.2727
2014-2019	8	.7051	.7273
Total	11	1.00	1.00

Table 6. Observed and Expected Proportion of Injuries – DCI Coding/Landis Total Drivers

13. Following Dr. Hanvey's coding protocol, I observe a non-significant chi-square test for the number of injuries (chi-square = 1.80, p = .23, see Table 7).

	Injury Count	Expected Proportion	Observed Proportion
2011-2013	9	.2949	.4286
2014-2019	12	.7051	.5714
Total	21	1.00	1.00

Table 7. Observed and Expected Proportion of Injuries – Dr. Hanvey Coding/Landis Total Drivers

14. Following the Millan coding, I observe a non-significant chi-square test for the number of injuries (chi-square = 0.80, p = .38, see Table 8).

15.	Injury Count	Expected Proportion	Observed Proportion
2011-2013	6	.2949	.4000
2014-2019	9	.7051	.6000
Total	15	1.00	1.00

Table 8. Observed and Expected Proportion of Injuries – Millan Coding/Landis Total Drivers

16. These results from the six different analyses are consistent with the analyses included in my previous report. Specifically, there is no evidence for a statistically significant reduction in relevant injuries following the introduction of the CRT test based on the chi-square tests.

CRT TESTING ACROSS YEARS

17. Table 9, Figure 1, and Figure 2 depict the number and percentage of individuals who took the CRT test pre-hire and passed, incumbents who received passing scores, incumbents who received failing scores, and those who took the test pre-hire, received a failing score, but were hired.

	Hire Pass	Incumbent Pass	Incumbent Fail	Hire Fail	Total Employees
2014	32	77	15	0	220
2015	93	94	17	1	252
2016	118	86	18	2	257
2017	158	75	12	1	277
2018	202	70	9	4	314
2019	282	60	8	2	374

Table 9. Number of CRT Test Takers per Year by CRT Testing Status

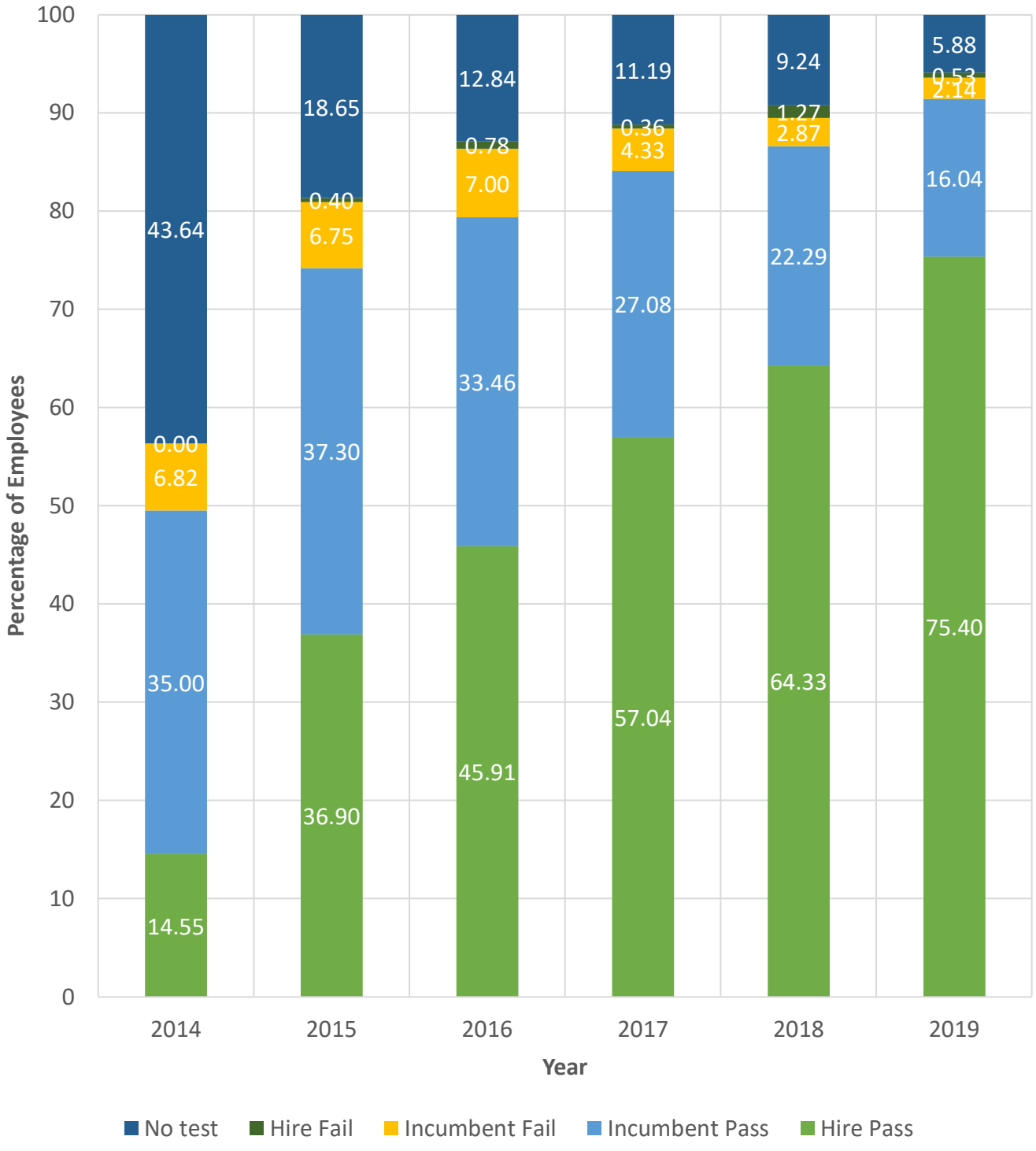

Figure 1. Percentage of Employees by CRT Testing Status

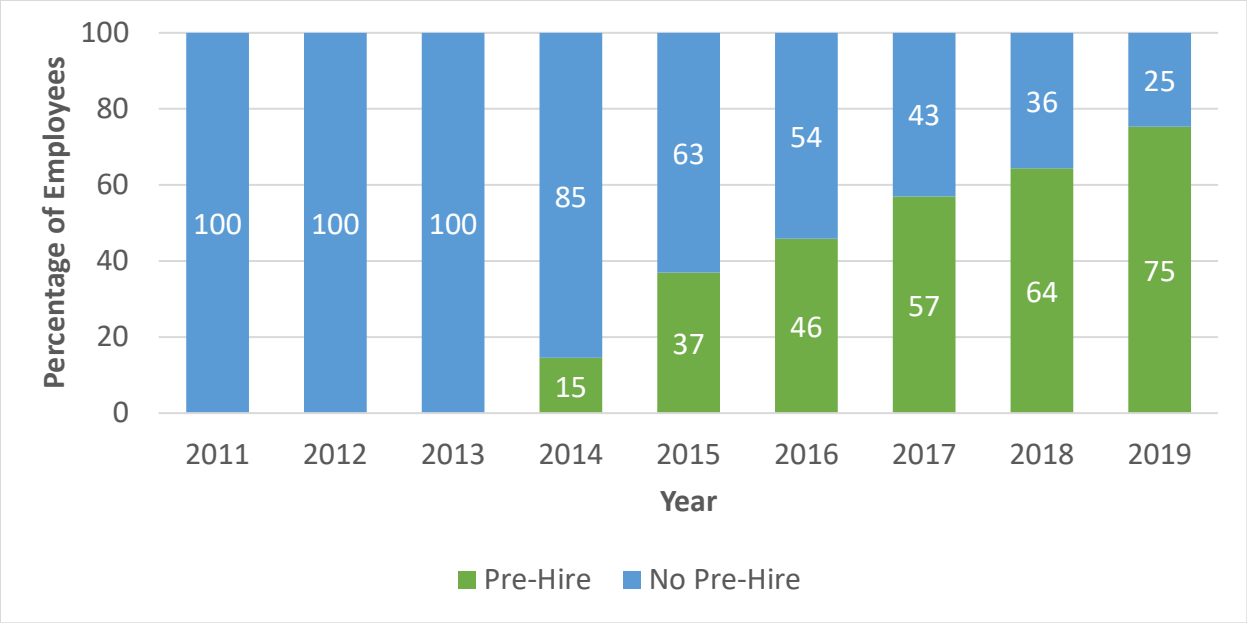

Figure 2. Percentage of Employees by CRT Testing Status (Pre-Hire v. All Others)

FISHER'S EXACT TEST

18. Data were also analyzed using a Fisher's Exact Test which evaluated the relation between whether an individual took the CRT test pre-hire or not and whether they subsequently incurred a relevant injury.[6] These analyses are similar to those included in the DCI report (pp. 12 & 29).

19. Current analyses explicitly consider whether an individual took the CRT test pre-hire and whether she or he incurred a subsequent relevant injury. Analyses were again performed using the three different coding approaches.

20. Of note, the numbers of individuals included in these analyses are different than those reported in the prior chi-square tests as the Fisher's Exact Test also includes individuals who were employed for only part of a given year (i.e., hired in a given year, but no longer employed on December 31 of that year). In short, any driver who appeared in the provided file (Driver List 2014 to Current.xlsx) was included in the following reported analyses.

[6] One individual had two injuries recorded. Results here are presented treating each injury as a separate instance.

21. Following the DCI coding system, I observe a non-significant Fisher's Exact Test for the number of injuries (Odds Ratio = 3.02, p = 0.45, see Table 10)[7].

	No Injury	Injury	Total
No Pre-Hire Test	441	1	442
Pre-Hire Test	1020	7	1027
Total	1461	8	1469

Table 10. Relation between Tested Status and Injury (2014-2019) – DCI Coding

22. Following Dr. Hanvey's coding protocol, I observe a non-significant Fisher's Exact Test for the number of injuries (Odds Ratio = 4.77, p = .12, see Table 11).

	No Injury	Injury	Total
No Pre-Hire Test	441	1	442
Pre-Hire Test	1016	11	1027
Total	1457	12	1469

Table 11. Relation between Tested Status and Injury (2014-2019) – Dr. Hanvey Coding

[7] The Odds Ratio is a measure of how far the contingency table is from the null condition (i.e., an Odds Ratio of 1.00).

23. Following the Millan coding, I observe a non-significant Fisher's Exact Test for the number of injuries (Odds Ratio = 3.46, p = .29, see Table 12).

	No Injury	**Injury**	**Total**
No Pre-Hire Test	441	1	442
Pre-Hire Test	1019	8	1027
Total	1460	9	1469

Table 12. Relation between Tested Status and Injury (2014-2019) – Millan Coding

24. As a summary, Table 13 presents the number injuries for each coding approach in relation to whether an individual took the CRT test pre-hire. Only a single injury in each coding approach was associated with a driver who did not take the CRT test pre-hire. All other injuries were associated with drivers who were hired after taking the CRT test.

Year	CRT Test for Hire Percentage	No CRT Test for Hire Percentage	DCI Coding		Hanvey Coding		Landis Coding	
			Hired with CRT + Injured	Hired w/o CRT + Injured	Hired with CRT + Injured	Hired w/o CRT + Injured	Hired with CRT + Injured	Hired w/o CRT + Injured
2014	15%	85%	0	1	0	1	0	1
2015	37%	63%	0	0	0	0	0	0
2016	46%	54%	0	0	0	0	0	0
2017	57%	43%	1	0	2	0	2	0
2018	64%	36%	2	0	3	0	2	0
2019	75%	25%	4[8]	0	6	0	4	0

Table 13. Percentage of Drivers Hired with CRT Test and Number of Injuries by Testing Status

[8] In Dr. Hanvey's report, one individual (Van Beek) injured in 2019 is identified as having not passed the CRT test. A pre-hire test score was provided for this individual in the file "CRT Component Data Schuster.xls." This individual took and passed the pre-hire CRT test on 3/27/19 (BIS = 225).

25. Results from these analyses are consistent with those included in my previous report and those reported earlier herein. Specifically, there is no evidence for a statistically significant reduction in relevant injuries following the introduction of the CRT test based on the Fisher's Exact Test across all coding schemes. In fact, the tables reveal that more injuries occurred for individuals who took the CRT test pre-hire than those who did not. That is, the observed number of injuries for those who took the CRT test pre-hire is higher than what would be expected based on chance.

APPENDIX

FILES USED IN PREPARATION OF THIS SUPPLEMENTAL REPORT

1. Schuster WorkComp Injuries_withGraphs_07-06-20 – Provided in support of Dr. Hanvey's Report
2. Driver List 2014 to Current.xlsx
3. CRT Component Data Schuster.xls